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(54) Title: METHOD FOR FORMING A STRAINED SI-CHANNEL IN A MOSFET STRUCTURE

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C-SiGe 6

am-SiGe 5

am-Si 3B

BOX

Si 1

(57) **Abstract:** Method for forming a strained Si layer on a substrate (1), including formation of: an epitaxial SiGe layer (4) on a Si surface, and of: the strained Si layer by epitaxial growth of the Si layer on top of the epitaxial SiGe layer (4), the Si layer being strained due to the epitaxial growth, wherein the substrate (1) is a Silicon-On-Insulator substrate with a support layer (1), a buried silicon dioxide layer (BOX) and a monocrystalline Si surface layer (3), the method further including: ion implantation of the Si surface layer (3) and the epitaxial SiGe layer (4) to transform the Si surface layer (3) into an amorphous Si layer (3B) and a portion of the epitaxial SiGe layer (4) into an amorphous SiGe layer (5), a further portion of the epitaxial SiGe layer (4) being a remaining monocrystalline SiGe layer (6), the amorphous Si layer (3B), the amorphous SiGe layer and the remaining monocrystalline SiGe layer (6) forming a layer stack (3B, 5, 6) on the buried silicon dioxide layer (BOX), with the amorphous Si layer (3B) being adjacent to the buried silicon dioxide layer (BOX).